of the late Prof. Story-Maskelyne, F.R.S., of Basset Down, Swindon. They have one son, Nevil, who, after doing duty in the Secretary's Department of the War Office shortly after the outbreak of the war, is now on active service.

T. E. THORPE.

NOTES.

WE regret to learn that Dr. Theodor Boveri, professor of zoology and comparative anatomy in the University of Würzburg, died there, after a long illness, on October 15, at fifty-three years of age.

THE death occurred on November 5, at sixty-three years of age, of Mr. J. Sinclair, editor of the *Live Stock Journal* and the *Agricultural Gazette,* and author and editor of many standard works on stock-breeding and agriculture.

WE learn from *Science* that Prof. Augustus J. Du Bois, for thirty years professor of civil engineering in the Sheffield Scientific School, Yale University, died on October 19, at the age of sixty-six years; and that the Rev. C. M. Charroppin, S.J., formerly head of the department of science of St. Louis University, died on October 17.

THE following have been elected officers of the Cambridge Philosophical Society for the ensuing session, 1915–16:—*President*: Prof. Newall. *Vice-Presidents*: Dr. Shipley, Dr. Fenton, Prof. Eddington. *Treasurer*: Prof. Hobson. *Secretaries*: Mr. A. Wood, Dr. Arber, Mr. G. H. Hardy. *New Members of the Council*: Dr. Bromwich, Dr. Doncaster, Mr. C. G. Lamb, Dr. Marr, Mr. J. E. Purvis.

AT the annual meeting of the Faraday Society on October 19 the following officers and members of council were elected to serve for the year 1915–16:—*President*: Sir Robert Hadfield. *Vice-Presidents*: Prof. K. Birkeland, Bertram Blount, W. R. Bousfield, K.C., Prof. F. G. Donnan, Dr. Eugene Haanel, Prof. A. K. Huntington, Dr. T. M. Lowry. *Treasurer*: Dr. F. Mollwo Perkin. *Council*: W. R. Cooper, Dr. C. H. Desch, Dr. J. A. Harker, Emil Hatschek, Cosmo Johns, Prof. A. W. Porter, E. H. Rayner, A. Gordon Salamon, Dr. G. Senter, Cav. Magg. E. Stassano.

A FURTHER appeal is made for the presentation or loan of telescopes for use with the batteries at the Front. Large telescopes on stands, deer-stalking telescopes, good pocket telescopes—in short, any type except toys are acceptable. Astronomical eye-pieces, etc., not wanted on service, are removed before issuing and marked with a number identical with that engraved on the telescope. Offers or instruments should be sent to the secretary, Lady Roberts's Field Glass Fund, National Service League, 72 Victoria Street, S.W.

IT has been found necessary to make certain alterations in the arrangements originally made for the London meetings of the Institution of Electrical Engineers. The revised programme for the immediate future is:—November 18, the inaugural address of the president, Mr. C. P. Sparks; November 25, "Some Difficulties of Design of High-speed Generators," by Prof. A. B. Field; December 16, "The Design of High-pressure Distributing Systems," by J. R. Beard; January 13, "The Predetermination of the Performance of Dynamo-Electric Machinery," by Prof. Miles Walker; January 20, "The Possibilities in the Design of Continuous-current Traction Motors," by N. W. Storer.

THE President of the Board of Agriculture and Fisheries has appointed a Departmental Committee to make arrangements with a view to the maintenance, so far as possible, of adequate supplies of fertilisers for the use of farmers in the United Kingdom. The Committee is constituted as follows:—The Right Hon. F. D. Acland, Parliamentary Secretary to the Board of Agriculture and Fisheries (chairman); Mr. R. H. Rew, Board of Agriculture and Fisheries; Mr. T. H. Middleton, Board of Agriculture and Fisheries; Mr. G. J. Stanley, Board of Trade; Mr. J. Dundas White, Scottish Office; Mr. H. Ross Skinner, Ministry of Munitions; Mr. E. J. Foley, Admiralty; Mr. R. J. Thompson, Board of Agriculture and Fisheries. The secretary of the Committee is Mr. H. D. Vigor, 3 St. James's Square, London, S.W.

THE death is announced of Dr. Gaston Vasseur, professor of geology in the University of Marseilles, at the age of sixty years. His early works on the Tertiary formations of the Paris basin and the west of France placed him in the first rank of French stratigraphical geologists, and for many years he was employed by the Geological Survey of France in preparing the detailed map of the south-western area, which he had the satisfaction of completing. He also published as an independent work an important geological map of the whole of France. During the progress of his researches in the field he amassed a great collection of fossils, now in the museum of Marseilles, where it still awaits detailed study and description.

THE death is announced of Dr. C. J. Bouchard, professor of pathology in the University of Paris. Born in 1837, Prof. Bouchard received the early part of his medical education at the Lyons Medical School before entering the faculty of medicine of the University of Paris, where he graduated in 1866. He was appointed professor of pathology in the University of Paris in 1873, afterwards acting as dean of the faculty of medicine. In 1887 he became a member of the Institut, and later an officer of the Legion of Honour and president of the Academy of Sciences. He laboured devotedly for more than fifty years at clinical medicine and general pathology, conducting research work which in many directions materially influenced the course of practical therapeutics. He worked upon ptomaine poisoning and autointoxication, on the functions of the leucocytes, on the pathology of nutrition, on the bactericidal power of the blood, immunisation and vaccination, on radiology, and on many of the problems of tuberculosis. He published several works, including a justly popular text-book of pathology. He took a considerable part in bringing about friendly relations between French and British doctors, and was chairman of the committee which organised the visit of British medical men to Paris in 1905. Prof. Bouchard was held in high regard in France and abroad, and his death will be generally regretted.

BY the death of Lieut. Gordon Sanderson, killed in France on October 13, the Archæological Survey of India has lost the services of a young officer of great promise. Mr. Sanderson was born in 1886, and, after serving for a time in the Egyptian Public Works Department, was appointed in 1910 an assistant superintendent in the eastern circle of the Archæological Survey of India. At the end of 1911 he was transferred to the northern circle as officiating superintendent of Muhammadan and British Monuments, while Dr. Ph. Vogel was acting general superintendent in the absence of Mr. Marshall. His appointment was confirmed in March, 1912. At the beginning of the present year he received permission to transfer to the military department, and was attached to the 2nd Batt. 2nd Gurkhas. Mr. Sanderson's work in the northern circle was especially concerned with the conservation of the important examples of Mughal art in Delhi, Agra, and Lahore. Some few years ago, arrangements were made whereby the royal palaces, which had been used as barracks, were evacuated by the military authorities and handed over to the survey. Mr. Sanderson ably continued the work of restoration made possible by the transfer. Its progress was announced from time to time in his contributions to the annual reports of the survey. These included a description of the Shāh Burj, a pavilion built by Shah Jehan, and restored by the late Mr. Froude Tucker in 1908, a report on conservation in Agra and the neighbourhood, and an account of Shah Jehan's Fort at Delhi, in which his powers of lucid description were ably seconded by his skill as a draughtsman.

WITH much regret we announce the death of Mr. Donald Ewen, who was killed while tending the wounded between the lines near Loos about a fortnight ago. Mr. Ewen was serving at the time as a private in the London Scottish Regiment, but an order for his recall, to take up important work at the National Physical Laboratory, had been issued by the War Office; he is thus another of those sad cases where a promising young man of science, who was to have returned home for important work, has been killed just before the order was to be carried out. Mr. Ewen was born in Birmingham in 1887, and educated at Oundle School and Birmingham University, taking his M.Sc. in metallurgy in 1910, and gaining the Wiggin and Bowen research scholarships. He then entered the National Physical Laboratory, where he was to attain the grade of assistant on his return from France. He published many papers on metallurgical subjects, collaborating with Prof. T. Turner, of Birmingham, and, more recently, with Dr. W. Rosenhain, of the National Physical Laboratory. The latter papers dealt principally with the hypothesis of the existence in metals of an amorphous intercrystalline cement, and Mr. Ewen's careful experimental work did much to establish the theory as a well-based working hypothesis. His death is to be regretted, not only as that of a cheerful and enthusiastic personality, but also as a research worker in a field that urgently needs cultivation, and one from whom further important contributions to metallurgical science might well have been expected.

CAPT. W. LORING, of the 2nd Scottish Horse, who died on a hospital ship on October 24, from wounds received at the Dardanelles, had in earlier years done distinguished work in classical archæology. After a brilliant career at Eton and Cambridge, he went out in 1889 as a student of the British School at Athens, and for the three following years remained at the school as Craven student. During that period he took an active part in excavations, notably in those at Megalopolis, besides undertaking on his own account a complete topographical survey of Arcadia. When he settled in London, as an examiner in the Board of Education, he held for a time the post of secretary to the school at Athens, and it was during this period that he volunteered for service in South Africa, first as a trooper in a yeomanry regiment, and then with a commission in the Scottish Horse. He was severely wounded, was twice mentioned in despatches, and received the Distinguished Conduct Medal. He left the service of the Board, where he had been private secretary to Sir John Gorst and Sir William Anson, in order to become director of education under the Education Committee for the West Riding of Yorkshire, but vacated the post through a difference of opinion with his committee, and about a year later, in 1905, became warden of the Goldsmiths' College, New Cross, a post he held until his death. He had always kept in touch with the Scottish Horse, and when the present war broke out he at once rejoined the colours, and after a year's training in England went out to the Dardanelles with the regiment in August last. In Capt. Loring the country has lost a man of real ability, of remarkable force of character, and single-hearted devotion to duty.

WITH the passing away of Prof. James McCall, principal of the Glasgow Veterinary College, on November 1, at the advanced age of eighty-one years, veterinary science has lost one of its greatest and most highly esteemed exponents. Educated at Wallacetown and Ayr Academies, he was intended for the legal profession, but that work did not prove congenial. Consequently he soon deserted it, and enrolled as a student at the Dick Veterinary College, Edinburgh, where he qualified as a member of the Royal College of Veterinary Surgeons in 1860, and afterwards obtained his fellowship in 1877. His enthusiasm for the progress of veterinary science enabled him to overcome opposition on the part of existing veterinary colleges when he applied for a charter for the establishment of the Veterinary College of Glasgow in 1862. The charter was, however, granted and signed by the late Queen Victoria in 1863. From that time the college has steadily progressed, and has been transformed from a private to a public incorporated institution, approved and supported by the Scotch Education Department, the powers of which have now been transferred to the Board of Agriculture for Scotland. The alumni of the institution include some of the most notable exponents of veterinary science, both in the British Isles and the Colonies, and they are at one in attributing their success to the excellent teaching and example of the late principal. Prof. McCall was a man of action, and did not resort much to the pen. His outstanding abilities were early recognised by the Government and local authorities. He might be described as one of the pioneers of veterinary public health, recognising as he did the importance of veterinary inspection of meat and of dairies, and it was largely owing to him that Glasgow earned the distinction of being the first city to introduce the safeguard to public health on those lines. Amongst his professional honours, Prof. McCall was president of the Royal College of Veterinary Surgeons 1890–91, vice-president 1868–9, 1871, and 1873 to 1879, and member of the council 1884–95, and 1899–1915.

DR. SIDNEY COUPLAND's Harveian oration, published in the *Lancet* of October 30, deserves careful study. Not that we need admire the existence of Harveian and Hunterian orations. It is absurd, thus to make immortality compulsory. There have been a hundred orations in memory of Hunter, and many more than a hundred in memory of Harvey. The result is, that the more courageous orators are venturing to hang their own special subjects on these two exalted pegs: so that we have a Hunterian oration on some new discovery which "would have interested Hunter," or on some new method of treament "not dreamed of in the days of Harvey." These monumental antiquated lectures ought to be on a different man each time—Vesalius, Paré, Jenner, Cooper, Darwin, Pasteur, Lister: a whole host of immortals are waiting their turn. But Harvey's life is always worth hearing of; he might be added to Hazlitt's list of people whom one would like to meet. He lived in wonderful times, and he was a man of great charm and distinction of character, apart from his mighty work in physiology. On Harvey's scientific work Dr. Coupland hangs his own authoritative subject, the pathology and the treatment of insanity. Nothing in all medicine and surgery is more worthy of note than the present materialistic study of "mental diseases." It is bound to give results of very great and lasting value; it is miles ahead of the old psychological talk, which was a sort of Linnean classifying; it has revolutionised our concepts of insanity, and it will provide new resources for the treatment of the insane. But if the men of science and the physicians are to do their best, they must have the help of public opinion. The old half-superstitious, half-sentimental terror and hatred of insanity must be put away—easier said than done, but worth doing—and we must all be prepared to support any good national plan which can be devised for the early detection, isolation, and treatment of incipient cases.

A NEW part of the Proceedings of the Prehistoric Society of East Anglia begins the second volume of the publications of this active society. Like the previous parts, it is well illustrated by plates and text-figures, chiefly of implements, and it deals with many subjects of more than local interest. In his presidential address Mr. J. Reid Moir returns to the question of flint implements found beneath the Red Crag of Suffolk; and in a subsequent paper he discusses a series of mineralised fragments of bone from below the base of the Red and Coralline Crags, which he considers to be implements of a primitive type made by man. A valuable account of the sub-Crag detritus bed itself is contributed by Mr. Alfred Bell. Mr. R. H. Chandler describes implements of the Les Eyzies type from a working floor in the Cray valley, Kent, and Mr. Henry Dewey discusses the surface changes since the Palæolithic period in Kent and Surrey According to Mr. Dewey, "there can be no doubt that flint implements characteristic of widely different periods all occur together on the surface of the Kent and Surrey hills. The mere fact of their occurrence in considerable numbers suggests continuous occupation of the sites from early Palæolithic to late Neolithic times; and that no destructive agencies of sufficient power to remove them acted either during or since the time of their deposit."

REFERENCE has been made in these columns to the Economic Bulletins on "The House-fly as a Danger to Health" (No. 1), and "The Louse in its Relation to Disease" (No. 2), lately published by the trustees of the British Museum. An account, still more condensed, of "The Danger of Disease from Flies and Lice" has now been issued as a four-page Economic Leaflet (No. 1) by the trustees. The life-histories and habits of the insects are dealt with as effectively as possible in the small space allowed, and practical directions for their extermination or for the prevention of their infective activities are clearly given.

THE latest number (No. 2, of vol. vi.) of the Bulletin of Entomological Research is of larger size than usual, and contains at least three papers of importance. Prof. M. Bezzi describes with clear structural figures the Ethiopian fruit-flies of the genus Dacus. Mr. F. V. Theobald contributes part 2 of his enumeration of African Aphididæ, diagnosing and figuring many new species, and founding three new genera. It is of interest to know that common European species, such as *Macrosophum pisi, M. sonchi,* and *Lachnus viminalis,* are to be found in Egypt, and the first-named in British East Africa also. Incidentally, Mr. Theobald furnishes a table for the discrimination of all the rose-feeding aphids known to him. Mr. A. T. Stanton describes, with illustrations of external features, the larvæ of thirteen Malayan Anopheline mosquitoes.

A BULLETIN (No. 8, 1915) issued by the Department of Fisheries for the Indian provinces of Bengal and Bihar and Orissa deals with the statistics of fish caught during the year 1912–13. Mr. T. Southwell refers to the undoubted fact that the supply of fish in the United Province is diminishing. Fresh-water fisheries are certainly exhaustible, and in this case irrigation schemes have produced changes which have led to diminution of the natural resources. The remedy, he indicates, lies in artificial cultivation, basing this procedure upon the scientific knowledge of the natural history of the staple species now gradually being obtained by the Department. Artificial culture, he says, will not be a difficult task, but it will be difficult so to organise this work that restocking of the rivers, *beels,* and tanks of the province may proceed rapidly under the new conditions. Economic difficulties will further hamper the improvement of the fisheries, but there is much hope for progress in the fact that the Department of Fisheries is a growing one, basing its administrative work upon a foundation of scientific investigation.

THE Gardens Bulletin of the Straits Settlements, No. 9, vol. i., contains among other notes three papers on yams, one of which, on the sprouting of the tubers of *Dioscorea alata,* is of general botanical interest. It has been known for some time that the tubers of yams sprout more quickly from the basal or older portions than from the younger, and that if a tuber be halved the shoots are usually produced towards the base of either half, and most quickly from the base of the oldest half. Mr. Burkill has made a careful series of experiments with tubers cut up into sets, and has recorded in tabular form the date of the appearance of the sprouts from the different sets. The results are in agreement with expectation, but it is found that different races vary considerably in the precocity or lateness of their sprouting.

MR. E. D. MERRILL continues his studies on Philippine botany in No. 4 of vol. x. of the *Philippine Journal of Science* with an account of the Anonaceæ of the islands. The family is well represented in the Philippines, and twenty-four new species are described in the present paper. The genus Papaulthia, recently described by Diels from material collected in New Guinea, is found to be represented in the Philippines by six species formerly included under Polyalthia and Unona. *Papaulthia mariannae,* described by Safford, from the Mariana Islands, is considered by Merrill to be the type of a new genus Guamia, allied to Oncodostigma rather than to Papaulthia. The genera Desmos, Dasymaschalon, Griffithianus, Meiogyne, and Pseuduvaria are also new to the flora of the islands.

THE issue of a catalogue by Messrs. J. Wheldon and Co., devoted exclusively to agriculture, serves as a reminder of the number and value of agricultural books that have appeared from time to time in this country, and particularly in the eighteenth and early nineteenth centuries. The catalogue includes the thirteenth-century Walter of Henley's "Husbandry" (1890 reprint), Fitzherbert's "Book of Husbandry" (Skeat's reprint), and typical works by most of the well-known writers that followed—Tusser, Blith, Ellis, Bradley, and, to come to the end of the eighteenth and beginning of the last century, Young and Marshall. Among the most interesting items are a long series of the Annals of Agriculture, a complete set of the octavo volumes describing the survey of England and Wales made by the Board of Agriculture during the years 1795–1815, and an almost complete set describing the Scotch survey. The prices serve to remind us that the old agricultural books are becoming scarcer; it is notorious that many of them have in the past found their way over to the United States. Indeed, the agricultural expert who has hitherto wanted to consult agricultural literature, either old or new, has had no little difficulty, and he has been very unfavourably situated in comparison with the chemist or the botanist, who could always go to the library of the Chemical, the Linnean, or the Royal Society. It is hoped that the new library at Rothamsted, when it is developed, will remedy this defect.

THE monthly meteorological charts of the North Atlantic appear with regularity, and contain much useful information. In the November issue an account is given of the severe cyclone which devastated the north side of Jamaica on August 12. Details are promised later, but from the information to hand it appears that the storm centre passed fifty miles north of Jamaica, after devastating the south of Haiti. On August 16 it reached Galveston, where the wind attained ninety miles an hour. The disturbance was fifteen hours in transit. On the 17th it passed south of Houston, and continued north-west. On the 18th it recurved in 32° N. 98° W., and proceeded towards the St. Lawrence valley, where it died out in about 47° N., 74° W. on August 23rd. All along its track, but especially in Texan ports, considerable damage was done, and many lives lost. The greater part of the banana plantations in Jamaica was destroyed, but the coconut trees seem in great measure to have escaped.

THE October number of the Journal of the Franklin Institute contains an article by Dr. H. E. Ives, of the Physical Laboratory of the United Gas Improvement Company of Philadephia, describing the apparatus he exhibited before the American Physical Society a year ago for simplifying photometry and placing it on a firmer physical basis. Light as one of the forms of radiation should be measured in ergs per second or in watts, and not in terms of an abitrary unit, like the lumen. The instruments for measuring radiation are, however, sensitive to radiations which produce only a partial or no luminous sensation in the average eye. It is therefore necessary to interpose between these instruments and the luminous source an absorbing substance which will transmit of each type of radiation a fraction proportional to the sensitiveness of the normal eye for that type. Such a substance combined with a thermopile or bolometer and a galvanometer would constitute an artificial eye, and the deflections of the galvanometer would be proportional to the light entering the eye. Dr. Ives recommends as the absorbing substance a layer one centimetre thick of a solution containing 60 grams cupric chloride, 14 cobalt ammonium sulphate, 1·9 potassium chromate, and 18 c.c. nitric acid to the litre. A layer of water 2 cm. thick should be interposed between the source and the solution.

AN interesting account of the potash mines in Alsace, which helps to give a true perspective of the part they are likely to play in the future production of the world's supply of potash, is contained in a short article in *La Nature* of October 2, p. 220. The value of these mines has undoubtedly been greatly exaggerated by the newspaper Press, but none the less, they are of great and real significance. As regards the scheme of nationalisation which has been frequently mooted, it is pointed out that already 45 per cent. of the shares are held by Alsatians or Frenchmen, so that such a scheme is scarcely legitimate. Under the German *régime* the part reserved to the Alsatian mines by the *Kalisyndikat* of Stassfurt represented only 10 per cent. of the total sales, although a policy of free competition would have justified a far greater output. It is, however, probable that after the war arrangements will be made allotting to the Alsatian mines at least 25 per cent. of the total world's supply. The development of the Catalonian mines may modify this figure, but the development in this field promises to be slow.

We have received a copy of the first issue of the Journal of the Association of Official Agricultural Chemists (Baltimore, U.S.A.: Williams and Wilkins Co.), of which the Syndics of the Cambridge University Press have undertaken the agency in the British Empire. The journal will be the official medium for the presentation of data and analyses in the domain of agricultural chemistry, and will include the proceedings of the association, reports of scientific research, and complete statements of the official methods. Until recently the work of the association has been included in special bulletins published by the Bureau of Chemistry of the U.S. Department for Agriculture; the publication in journal form will make this work available to a large public. The purpose of the association is to secure uniformity and accuracy in the methods, results, modes of statement of analysis of fertilisers, soils, foods, dairy products, medicinal plants, drugs, and other matters connected with agricultural industry. The journal, therefore, is of importance to the chemist, the agriculturist, and the manufacturer. It will be published quarterly, and each volume will consist of about 600 pages. The subscription price is 23*s.*, post free. Subscriptions may be sent to Mr. C. F. Clay, Cambridge University Press.

Every engineer who, since the war began, has taken up the manufacture of war material has found himself hampered, and his output delayed, by the Woolwich regulations for inspection and gauging. The leading article in the *Engineer* for October 29 gives an interesting example of regulations which might be relaxed in the present circumstances. In the manufacture of steel bars for shells, the Government brand is put upon the material at every stage of its progress. The cast ingot is stamped, then the billet, and then the bar rolled from it. From the bar a dozen or more separate pieces, each to make a single shell, have to be cut. The brand is stamped upon the side of each piece before it is cut off. Rough turning removes it, and it has to be renewed on the base, then the base is cut away, and the brand has to be put on the side. In peace time this was splendid—the identity of every shell was preserved. At present there is no reason for keeping this close watch on every piece, and the final test stultifies the whole. Only one shell is drawn from a mixed batch of five hundred, and tested by firing from a gun. If it fails the whole mixed batch may be condemned. There are several other cases which might be quoted in which system appears to have run away with intelligence.

Messrs. T. C. and E. C. Jack (London and Edinburgh) have in preparation for their "Through the Eye" series:—"The Evolution of the Plant," by Dr. H. F. Wernham; "Greek Civilization," by Prof. J. S. Phillimore; "Bird Life," by W. P. Pycraft; "The Evolution of the Bird," by W. P. Pycraft; "Roman Civilization," by A. F. Giles.

OUR ASTRONOMICAL COLUMN.

Variability of α Orionis.—In the current number of the *Observatory* Mr. F. W. Backhouse directs attention to the abnormally diminished brightness of this star. On October 14 it appears to have been 0·5 magnitude—one magnitude fainter than usual.

The Solar Constant.—Criticism of the extremely accordant determinations of the solar radiation made under the auspices of the Smithsonian Astrophysical Observatory has been based almost entirely on the amount of the correction for the effect of the terrestrial atmosphere. Prof. Very maintains that the Smithsonian observers underestimate this effect, consequently obtaining a value much too low. Although the Langley method has already been applied under a diversity of conditions—height above sea-level, atmospheric transparency, temperature, etc.—yielding satisfactorily harmonious results, yet unceasing efforts have been made to apply more and more severe tests by carrying out the measures under the least possible superincumbent air-mass. The most effective way in which this can be accomplished is by raising self-recording instruments to the greatest possible height in the atmosphere by means of free sounding balloons. An account of the most recent experiments of this kind is presented by Messrs. Abbott, Fowle, and Aldrich in a memoir (Smithsonian Misc. Coll., vol. lxv., No. 4, 1915), which forms an important contribution to the subject. Space only permits a hint at the ingenious instrumental devices embodied in the apparatus, the searching laboratory tests, and the manifold corrections involved in the reductions. The most successful day ascent was made on July 11, 1914, from Omaha. At a mean altitude of 22,000 metres (nearly fourteen miles) the three best records gave 1·76 Calories per sq. cm. per minute. Corrected to mean solar distance, etc., this becomes 1·84 Calories. The barometric record indicated a pressure of about 3 cm. of mercury (*i.e.* about 1/25 normal atmospheric pressure. Other pyrheliometric measures have been made at heights corresponding to pressures of 30 cm. (manned balloon, Dr. Peppler), 44 cm. (Mt. Whitney), and 62 cm. (Mt. Wilson). These records, with the maximum value observed by Dr. Kimball at Washington, when plotted lie quite close to a straight line. It is concluded that the Smithsonian value (1·93 Calories) for the constant of solar radiation outside the atmosphere is amply confirmed.

Proper Motions of Stars in the Region of N.G.C. 6705.—Recently M. Comas Sola announced the discovery of a number of large proper motions in the region of this cluster (Messier 11) by stereoscopic examination of photographs. In view of the considerable interest recently aroused in this and allied methods of rapidly determining proper motions (see various notes in this column, also in the current number of the *Observatory*), it is important to note that Prof. E. E. Barnard (*Comptes rendus,* vol. clxi., p. 411) has examined the region of this cluster in the stereocomparator. Although the pair of plates were separated by an interval of twenty-two years (approxi-